Claims

We claim:

1. A computer implemented system for transferring data over a master driven TDD/TDMA based wireless network characterized in that it operates with minimum delay in end-to-end transmission by including:
   - means for achieving optimum time slot utilization by minimizing the number of baseband packets created for each Link layer packet, each baseband packet being of a size corresponding to one of a permitted set of capacities 'C_1, C_2,.....C_n', and
   - means for optimum sharing of bandwidth, higher link utilization and low baseband packet transmission queue occupancy by adaptive scheduling of the transmission of said baseband packets in said queues.

2. A system as claimed in claim 1, wherein said means for minimizing the number of baseband packets created for each Link layer packet is an SAR-OSU algorithm comprising converting said Link layer packet into as many baseband packets of highest capacity 'C_n' as possible and repeating the conversion process on the unconverted bytes using each successive lower capacity baseband packet size until all the unconverted bytes have been converted into baseband packets.

3. A system as claimed in claim 1, wherein master driven TDD/TDMA based wireless network is a Bluetooth network and Link layer packet is L2CAP packet.

4. A system as claimed in claim 1, wherein said means for adaptive scheduling of transmission is an 'AFP' algorithm whereby a baseband packet transmission queue with a size greater than a defined threshold is continuously polled for a defined number of transmissions as long as its size remains greater than said defined threshold.

5. A system as claimed in claim 1 further comprising means for increasing the transmission polling interval for a baseband packet transmission queue with low packet traffic, such as when a 'poll' packet is sent instead of a 'data' packet.

6. A computer implemented method for transferring data over a master driven TDD/TDMA based wireless network characterized in that it operates with minimum delay in end-to-end transmission by:

- achieving optimum time slot utilization by minimizing the number of baseband packets created for each Link layer packet, each baseband packet being of a size corresponding to one of a permitted set of capacities '$C_1, C_2, \ldots\ldots C_n$', and
- maintaining optimum sharing of bandwidth, higher link utilization and low baseband packet transmission queue occupancy by adaptive scheduling of the transmission of said baseband packets in said queues.

7. A method as claimed in claim 6, wherein minimizing of the number of baseband packets created for each Link layer packet is by an SAR-OSU algorithm comprising converting said Link layer packet into as many

baseband packets of highest capacity Cn as possible and repeating the conversion process on the unconverted bytes using each successive lower capacity baseband packet size until all the unconverted bytes have been converted into baseband packets.

8. A method as claimed in claim 6, wherein master driven TDD/TDMA based wireless network is a Bluetooth network and Link layer packet is L2CAP packet.

9. A method as claimed in claim 6, wherein said adaptive scheduling of transmission is by an 'AFP' algorithm whereby a queue with a size greater than a defined threshold is continuously polled for a defined number of transmissions as long as its size remains greater than said defined threshold.

10. A method as claimed in claim 6 further comprising increasing the transmission polling interval for a baseband packet transmission queue with low packet traffic, such as when a 'poll' packet is sent instead of a 'data' packet.

11. A computer program product comprising computer readable program code stored on computer readable storage medium embodied therein for causing a computer to transfer data over a master driven TDD/TDMA based wireless network characterized in that it operates with minimum delay in end-to-end transmission by including:

- computer readable program code means configured for achieving optimum time slot utilization by minimizing the number of baseband

packets created for each Link layer packet, each baseband packet being of a size corresponding to one of a permitted set of capacities 'C_1, C_2,.....C_n', and

- computer readable program code means configured for implementing optimum sharing of bandwidth, higher link utilization and low baseband packet queue occupancy by adaptive scheduling of the transmission of said baseband packets in said queues.

12. A computer program product as claimed in claim 11, wherein said computer readable program code means configured for minimizing the number of baseband packets created for each L2CAP packet is an SAR-OSU algorithm comprising converting said L2CAP packet into as many baseband packets of highest capacity Cn as possible and repeating the conversion process on the unconverted bytes using each successive lower capacity baseband packet size until all the unconverted bytes have been converted into baseband packets.

13. A computer program product as claimed in claim 11, wherein master driven TDD/TDMA based wireless network is a Bluetooth network and Link layer packet is L2CAP packet.

14. A computer program product as claimed in claim 11, wherein said computer readable program code means configured for adaptive scheduling for transmission is an 'AFP' algorithm whereby a queue with a size greater than a defined threshold is continuously polled for a defined number of transmissions as long as its size remains greater than the defined threshold.

15. A computer program product as claimed in claim 11 further comprising a computer readable program code means configured for increasing the transmission polling interval for a baseband packet transmission queue with low packet traffic such as when a 'poll' packet is sent instead of a 'data' packet.